VOLUME 63, NO. 7 SEPTEMBER, 1961

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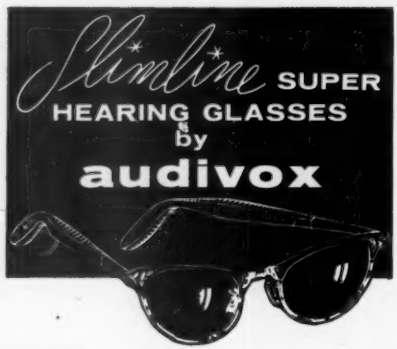

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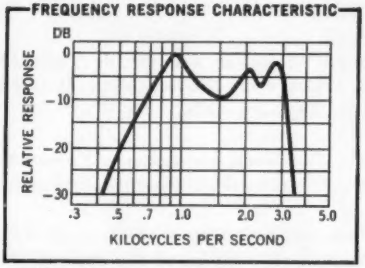

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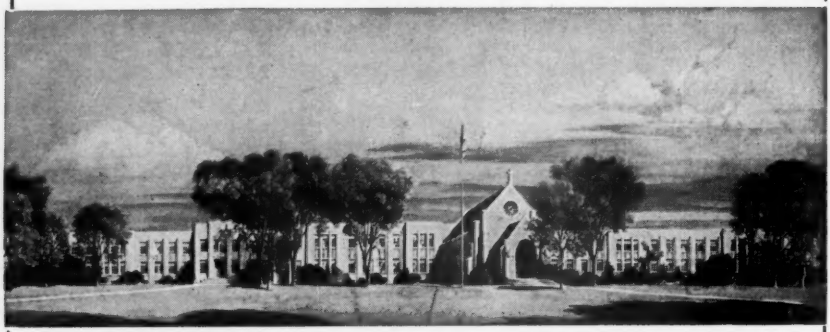

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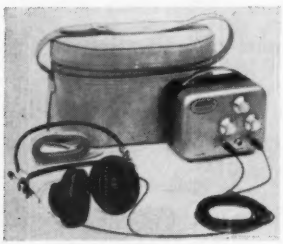

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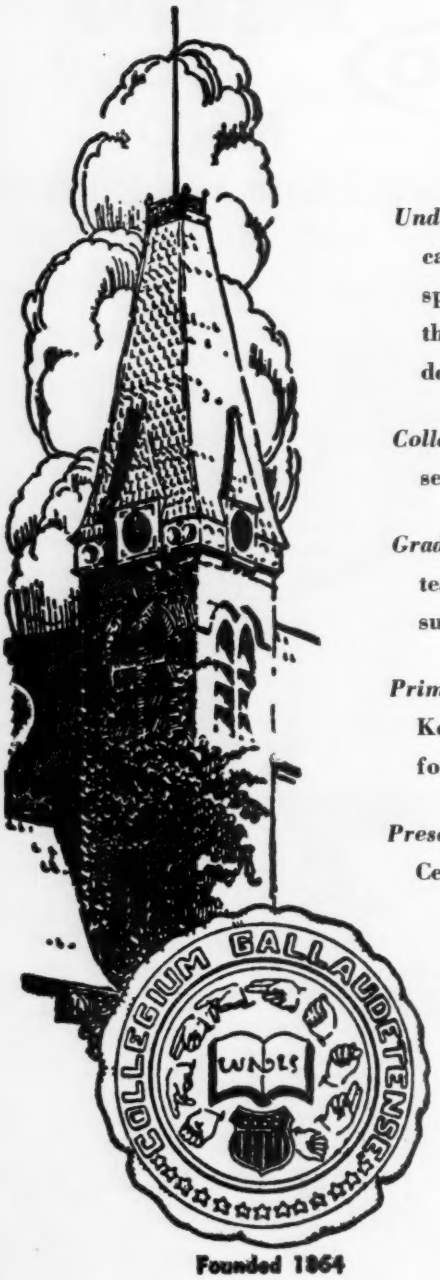

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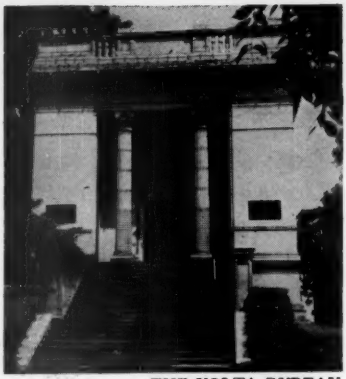
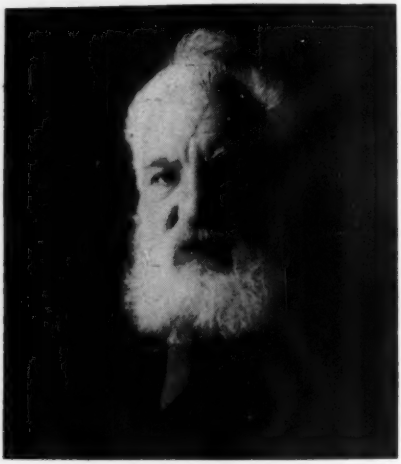


THE VOLTA BUREAU



ALEXANDER GRAHAM BELL

THE ALEXANDER GRAHAM BELL ASSOCIATION FOR THE DEAF welcomes to its membership all who are interested in improving the education of the deaf and the hard of hearing, their ability to communicate with those who hear normally, and their adjustment to life in the hearing world. Its membership fee ($5 a year—$100 for life) includes a subscription to *The Volta Review*. Those wishing to lend additional support to the work of the Association may become sustaining members for a fee of $10 per year.

THE VOLTA BUREAU, headquarters of the Association, is an information center about deafness, founded by Alexander Graham Bell in 1887. Its library on deafness and speech is probably the largest in the world, containing books in twenty or more languages.

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The VOLTA REVIEW

VOLUME 63 SEPTEMBER, 1961 NUMBER 7

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COVER

John Croke, outstanding deaf youngster in the Shorewood, Wis., public school program was "not proud, just happy" when he became an Eagle Scout. Photo is from the Milwaukee Journal, *which carried a lengthy story about John and his achievements.*

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Regional Meeting in Ft. Lauderdale

Ft. Lauderdale Oral School, host school of the Regional Meeting

FLORIDA facilities for the deaf will join the Alexander Graham Bell Association for the Deaf at the Fall Regional Meeting in Ft. Lauderdale this October 27-28. The Ft. Lauderdale Oral School will host the meeting, with most of the sessions being held at the First Presbyterian Church. Mary K. Van Wyk, former executive secretary of the Association and now director of the Ft. Lauderdale Oral School, is chairman of the program. Assisting her are Mrs. Paul Christie, program chairman, and Mrs. George H. Gore, publicity chairman.

The Friday morning program begins with open house at the Ft. Lauderdale School, a private institution now in its fourth year, with a student body of some 35 youngsters. Dr. George T. Pratt, Association president and principal of the Clarke School for the Deaf, Northampton, Mass., will address the group.

The Saturday program will be highlighted by a fashion show featuring local deaf teenagers who will model and describe their costumes to the audience. A panel of deaf adults will also participate. A special meeting of the Parents' Section will be held under the chairmanship of Robert H. Cole, president of the group.

The complete meeting program will be printed in the October *Volta Review*. Association members will also be mailed information regarding registration and local hotels during the month of September. Individuals wishing to save time in Ft. Lauderdale may fill out and return the advance registration form below. It is not necessary to be an Association member in order to attend the meeting.

Mail to: Mary K. Van Wyk, Director, Ft. Lauderdale Oral School
930 S.E. Ninth St., Ft. Lauderdale, Fla.

Enclosed is my check or money order for $2.00. I wish to register for the Fall Regional Meeting of the Alexander Graham Bell Association for the Deaf, October 27-28, 1961.

..... number of registrants (attach sheet with additional names and addresses if more than one is registering)

..... total registration fee.

Signed .....

.....

Cinefluorography As An Aid to More Intelligible Speech

HOWARD A. GREY
ROBERT F. SLOAN
FRANKLIN L. ASHLEY
ELISE HARN
WILLIAM HANAFEE

VERY serious communication problems result from significant hearing deficits. Either congenital deafness or a substantial hearing loss at birth may severely retard both language development and the establishment of adequate speech habits. Hearing losses which begin after childhood, too, give rise to speech defects of various kinds and degrees of severity. And, since deterioration of speech often results when the ear can no longer serve its normal monitoring function, individuals whose hearing becomes impaired in later life may need assistance in maintaining or retraining adequate speech.

Speech training or retraining for persons with impaired hearing involves attention to all aspects of expressive communication. Articulation, pitch, resonance and rhythmic components must, of course, receive help in various degrees in any adequate program. In addition, deaf children require assistance with language development, which must begin at an early age. Older deaf individuals often require training in all aspects of speech in order to change inappropriate habits of articulation and voice production.

S. Richard Silverman recently reminded us that "the prime objective of our speech work is intelligible speech," and that "this ideal must serve . . . as the basic motivating force of all speech teaching."[9] Yet, today we must repeat the pessimistic statement of Alexander Graham Bell, written half a century earlier: "We do not yet know how best to teach speech to the deaf."[2]

Without denying the importance of other aspects of speech, or their interrelationship in the development of communication, this paper is concerned chiefly with articulation and with presenting a proposal for assisting the development of greater speech intelligibility in aurally handicapped individuals.

Various kinds of approaches have been developed through the years for teaching adequate articulatory production to children and adults with severe or profound hearing losses. A review of these methods may be found in several sources.[3,5,11] Here we should like to indicate briefly two philosophies which seem to underly the various approaches.

Normal speech production develops and is maintained primarily through the auditory sense. But when hearing loss makes auditory monitoring of speech impossible, visual, tactile and

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kinesthetic senses are utilized in several combinations to train or maintain intelligible speech production. This multisensory approach constitutes one generally agreed-upon tenet of the training. It is based on the belief that since speech sound production is at least partially dependent upon these sensory modalities in the normal individual, their intensified use for the hearing handicapped constitutes a valid approach to the problem. Another tenet of current practice is that articulation teaching is best carried out synthetically rather than analytically. This implies that since normal speech production is a dynamic process of articulatory movements rather than a static set of positions or placements, the individual should be taught whole words and phrases rather than the constituent elements of the utterance.

Though fully in accord with these two philosophies, the authors have been concerned about the inherent inadequacies of many current training methods based upon them. The rationale of multi-sensory stimulation is to make the individual as aware as possible of all the sensations arising from the expressive act; yet most multi-sensory approaches rely primarily on vision. Visual cues, as customarily used, do enable the individual to see the formation of some sounds, however many other sounds and sound combinations are not ordinarily available to this sense. Tactile and kinesthetic cues can, of course, assist the act of visualizing speech production, but it is often difficult for the individual to understand what the cues represent, and how they relate to certain particulars of speech production. It is our experience that, though some sounds can be imitated and learned with the aid of these tactile or kinesthetic cues, for individuals with little or no usable hearing these sounds are likely to be those which have a high degree of visibility anyway.

Although we also agree that teaching dynamic movement of the articulators offers the possibility of more normal production than does the teaching of specific positions, methods which do not devote considerable time to practice on the production of specific sounds also exhibit many shortcomings. Since there is a limit to the number of sound combinations which can be imitated without some knowledge of their individual elements, almost all hearing handicapped individuals will need varying degrees of help in learning to articulate or blend certain sounds.

Diagrams and pictures showing the oral structures in various positions have been used by many teachers and clinicians as a means of making more speech sounds visible and teaching their correct production. However, the teacher or clinician is often hard pressed to help the individual use a new sound appropriately in a communicative context. Part of the problem is caused by the individual's inability to visualize a particular combination of articulatory positions in the proper sequence and duration necessary for a smooth flow of speech. The problem is also related to the difficulty encountered by the clinician or teacher in describing these complex ideas of placement, duration and movement without being able to fully demonstrate the entire process.

In order to assist the clinician or teacher in understanding and demonstrating the dynamic aspects of articulation, and to help hearing handicapped individuals visualize articulation both analytically and synthetically, we propose the use of cinefluorography as an adjunct to current teaching methods.

Cinefluorography refers to the recording of a fluoroscopic X-ray image by a motion picture camera.

The application of various forms of X-ray to the study of speech production began at the close of the nineteenth century. Rippman,[6] one of the earliest proponents of radiologic investigations of speech, developed profile charts to demonstrate the "ordinary articulations" of English vowels.

In later studies, using lateral still X-ray plates, Barclay and Nelson,[1] Russell,[7] and Holbrook and Carmody[4] established the position of the articulators in vowel and consonant production. More recently, diagnostic studies of velo-pharyngeal closure and of palatal function in cleft palate speakers have been devised.[10] Since cinefluorography reveals both the soft tissues and the bony structures of the articulators, it makes possible the study of articulatory activities which are not directly visible.

For this reason, and for others given earlier, the authors attempted to develop a cinefluorographic approach which would accomplish two primary goals:

1. To furnish teachers and clinicians, working with hearing handicapped individuals, information about the structures and normal movements of articulation which is not currently available by any other means. X-ray motion pictures can facilitate a knowledge and appreciation of normal speech production, which hitherto has not been possible, since it enables not only knowledge of the placement of the articulators for the production of an isolated sound, but also supplies a means of understanding how the positions and contacts of the tongue succeed each other in normal speech flow.

2. Our second goal is that of providing articulatory information to hearing handicapped individuals themselves. The diagnostic use of the X-ray motion picture apparently has overshadowed its obvious value as a teaching device. Even though Russell[8] advocated the use of radiological techniques for visualizing speech for the deaf as early as 1927, no present-day investigators have followed these original efforts. The diagrams and pictures currently used for teaching speech provide no more information than did Russell's headplates. Though an individual might be able to learn simple vowel-consonant combinations with the help of these diagrams, more complex combinations involving affricates or consonantal blends are extremely difficult to understand with current methods. Cinefluorography furnishes a means of visualizing these complex combinations.

Then too, in order to improve his articulatory production, the person with a severe hearing loss must first become acquainted with the nature of the speech process itself. While diagrams enable some orientation to the articulators, learning about such complex activities as, for example, the movements of the posterior tongue, and retroflexion of the front; and noting the differences in anterior tongue placement for a plosive and for a lateral sound, are almost impossible merely by means of observation and diagrams. These functions may be more clearly understood through the viewing of cinefluorographic films of speech. Current methods of teaching speech to hard of hearing or deaf individuals include exercises for flexibility, placement and movement of the articulators. Successful performance of these exercises, too, is greatly facilitated when the individual can see the activity he is expected to imitate.

In order to accomplish these goals the authors selected an adult male subject who was judged to have normal patterns of articulation. The subject was photographed in the upright position. Lateral cinefluorographic films were taken at 30 frames per second by a Westinghouse Image Intensifier and Cine Camera loaded with Eastman Kodak Cineflure film. A barium suspension was used to coat the oral and pharyngeal areas of the subject. The filming was accomplished in 40 seconds yielding a radiation exposure limit of 2.8 r at skin level.

Five phonemes were uttered individually, in words, and in sentences by the subject.

1.	(d)	day	It's a nice day.
2.	(l)	lie	Don't tell a lie.
3.	(n)	name	What is your name?
4.	(r)	run	He likes to run.
5.	(f)	fit	How does it fit?

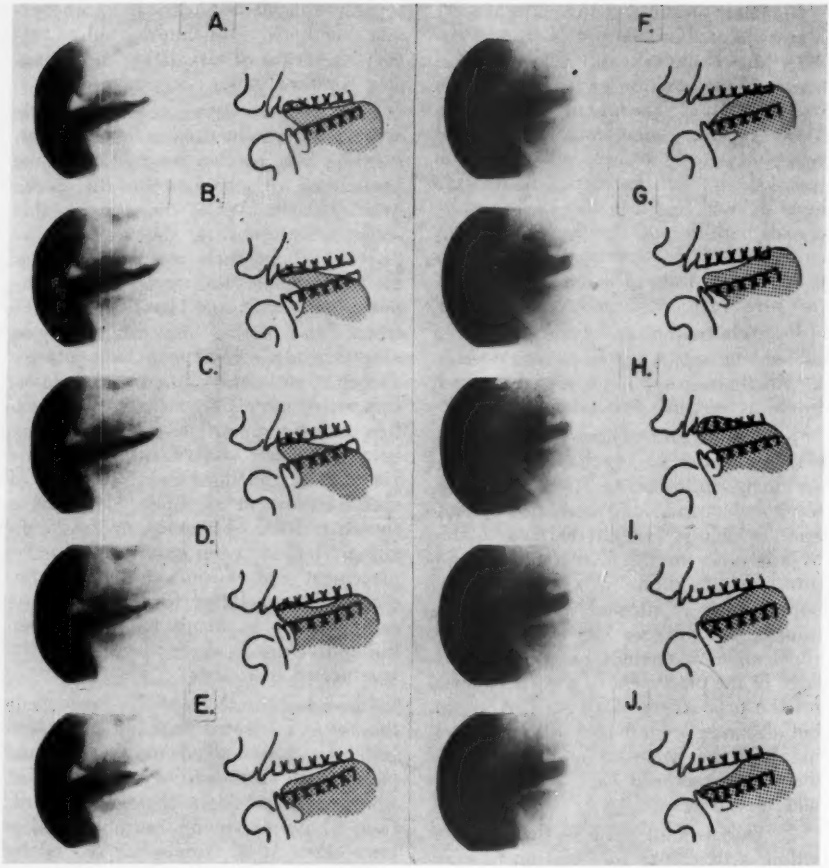

FIG. 1 **CINEFLUOROGRAPHIC ILLUSTRATIONS OF THE DIFFERENCES IN ELEVATION AND PLACEMENT OF THE TONGUE TIP BETWEEN *l* and *d*, AS PERFORMED BY THIS SUBJECT.**

Comparative Frame Analyses

Phoneme: (l) *Word*: "lie"

Frames A and B—Tongue approaches contact with alveolar ridge. Sides of tongue are relatively horizontal. As anterior contact is achieved, sides of tongue lower to permit lateral escape of air.

Frame C— Sides of tongue continue to lower during production of (l).

Frame D—Sides of tongue elevate for (*a*I) dipthong.

Frame E—Tip of tongue lowers as (*a*) portion of (*a*I) begins.

Phoneme: (d) *Word*: "day"

Frames F and G—Tongue begins movement toward alveolar ridge with tongue tip slightly preceding lateral elevation.

Frame H—Contact is made and maintained for implosive phase.

Frames I and J—Lateral and central contact is released simultaneously as tongue assumes position for succeeding sound, (eI).

This basic footage was then used to develop the final teaching film which has the following components:

1. An anatomical drawing in color indicating the lips, teeth and tongue.

2. An X-ray plate showing the same parts. This is used to orient the viewer to the X-ray portions which follow.

3. A title plate indicating the particular phoneme, word and sentence.

4. The cinefluorographic sequence showing the subject's production of the sound, word and sentence at a normal articulatory rate.

5. An anatomical drawing in color indicating the position of lips, tongue and jaw for the preceding phoneme. Two views of the drawing are shown. The first, a view of the entire oral cavity, indicates the position of the velum for that sound. The second view is a close-up, showing the anterior articulators in the same size and relationship as they appear in the cinefluorographic portions.

6. The phoneme, word and sentence are shown again in slower motion. (This was accomplished by skip-printing the original cinefluorographic sequences, and makes possible a better understanding of the movements involved in incorporating the phonemes into the sentence.)

7. The orienting drawing is again shown.

8. Finally, the cinefluorographic presentation of the phoneme, word and sentence is repeated at normal speed.

Steps three through eight are repeated for each of the five phoneme sequences used in this film.

Figure 1 indicates the articulatory patterns of this subject and illustrates how such films may be used to teach differences between difficult articulatory movements such as the tongue elevation and positioning for *l* and *d*. Analysis of each step of the articulatory movement followed by the viewing of motion pictures of the activity can assist the development of more appropriate habits of articulation by enabling the hearing handicapped individual to both analyze and synthesize the viewed kinesiology.

The cinfluorographic teaching film is proposed as a means of assisting the hearing handicapped individual in learning more appropriate speech patterns. Such a film does not constitute a complete teaching method by itself. Rather, by supplementing current methods, cinefluorographic films offer the means for maximally visualizing the complex activities of articulation. Such films, used in combination with other methods by a competent teacher or clinician, have the advantage of "opening up the mouth" so that the benefits of other visual, kinesthetic and tactile cues, taught either statically or dynamically, are greatly facilitated.

The most effective clinical use of such a film will depend upon the results of future research. Many questions as to the limits of applicability of this approach remain to be answered. It should be determined, for example, whether individuals with one class of hearing deficit, or with one type of preferred imagery, will respond differently to cinefluorographic films than those with another. To what extent young children may profit from such films, and their usefulness in classroom work, are other questions which can only be answered empirically. The authors be-

(*Continued on page* 356)

Left, the analytic and therapeutic possibilities of cinefluorographc films may be seen. The drawings are provided to facilitate identification of the articulators, and are an important part of the orientation portions of the teaching film itself.
The *d* sequence (word: 'day") illustrates the movement of the tongue from the *s* in "nice" to the *d* position and then toward the *eI* dipthong. The *l* sequence (word: "lie") demonstrates this subject's articulatory movement from the preceding (^) to the *l* then to the beginning of the *aI* dipthong. Note how the cinefluorographic film demonstrates the contrast in lateral activity of the tongue for these two sounds. The *l* requires maintenance of an airway between the sides of the tongue and the teeth, thus the tongue tip achieves a much greater elevation relative to the sides. For the *d*, both tip and sides must achieve contact to create the plosive effect.

THE USE OF RESIDUAL HEARING in the education of deaf children

T. J. WATSON

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Introductory

The term "deaf" has never been a very precise one. It has been, and still is, used as an adjective (and sometimes as a noun as in the phrase "the deaf") to describe persons whose hearing loss is sufficiently great to cause them to be unable to hear the everyday sounds of life, including conversational speech. This inability to hear may range from hearing with some difficulty some of the time or in some circumstances to inability to hear at any time and in any circumstances. It is clear, from the range of involvement that such a description would imply, that deafness is best regarded as a continuum at one end of which is hearing that is quantitatively and qualitatively only slightly deviant from normal and at the other end of which is a total loss of hearing for any kind of sound. At the least handicapping end of the continuum the adjective "deaf" is generally replaced by an adjectival phrase such as "hard-of-hearing" or "slightly hard-of-hearing" as these terms appear to be socially more acceptable. Thereafter, other descriptive phrases are used in varying segments of the continuum—phrases such as "moderately deaf," "severely hard-of-hearing," "severely deaf," "profoundly deaf," "subtotally deaf." The situation may be illustrated as in Figure 1, below.

Clearly, no fixed points or ranges in the continuum can be assigned to these descriptions and there may be considerable differences of opinion as to what quantitative amounts of hearing loss are covered by any given descriptive phrase.

It will therefore be seen that when consideration is being given to the use of residual hearing in deaf children there is some need to make clear with what kind of pupils we are concerned. It would be an obvious and reasonable assumption that children whose losses are such that they may accurately be described as totally deaf could be excluded since, by definition, they have no residual hearing. Such pupils, however, form a very small proportion of the total number with hearing losses. As long ago as 1891, Dr. Kerr Love of Glasgow established* that not more than five per cent of the pupils in that school were totally deaf. Best,** re-

*Report of Glasgow Institution for the Deaf and Dumb. Glasgow: 1891.

**Best, H., *Deafness and the Deaf in the United States*. New York: The Macmillan Co., 1943.

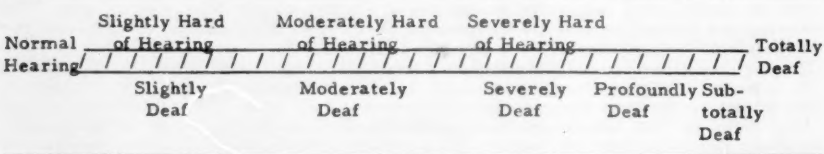

Fig. 1

porting on "Deafness and the Deaf in the United States," quotes a survey made in 1925 of 8,000 pupils in schools for the deaf in which it was found that only three per cent were totally deaf. In a survey of 353 pupils in schools for the deaf in England in 1948, Goodman* found that only three and four-tenths per cent gave no response to sound. All these surveys were made of pupils already in schools for the deaf and who could therefore reasonably be assumed to be those members of the population of hearing impaired whose losses were greatest. It would therefore seem likely that in fact the totally deaf form a very much smaller percentage of the whole group of children who have impaired hearing—probably less than one per cent.

Although it has been shown that very few deaf children are totally deaf to sound, this does not necessarily imply that all of the remainder have residual hearing which is usable for educational purposes. There is, in fact, some evidence that there are some children, amongst those described as "sub-totally deaf," in whom the residual hearing is so slight that its use seems to have contributed little or nothing to the ordinary purposes of education. It is difficult to decide whether this is the obvious result of the minimal amount of residual hearing or whether it is because of poor and inadequate measures taken to utilize it. Some substance is given to the latter thought as a result of contrary evidence that even a small amount of hearing can be used in special ways and under special conditions. The work of Hudgins** at the Clarke School, Massachusetts, and of van Uden*** at St. Michielsgestel, the Netherlands, provides evidence of the successful use of small amounts of residual hearing. It would therefore seem that such pupils should not be excluded from our study. Their particular problems will be examined later.

How far along the continuum is it necessary to go if we confine ourselves to deaf children? As was implied in an earlier paragraph, there is no clear-cut division between the descriptive phrases, nor, perhaps, is it wise to attempt to establish one. The use of the residual hearing of the pupils at the less-handicapped end of the scale is considerably less controversial, although not always better understood, so that for the purposes of this study we shall concentrate mainly upon children whose hearing loss is considered to be severe. Much of what will be said will in any case apply to children with less severe losses, so that it is not necessary at this point to be too precise as to the limits of the hearing of the children under consideration. It is hoped that the needs of the different groups will become apparent as discussion proceeds.

From the foregoing paragraphs it should have been recognized that individual differences between children is one of the factors which need to be taken into account when considering the use of residual hearing. It is obvious that it is essential to have a very clear and complete knowledge of the extent and limitations of a child's hearing as well as of other personal factors which may affect the information which a child can obtain through hearing. There are two other highly significant factors which need be taken into account. The first of these is concerned with the nature of the sounds which are being conveyed to a child. We are naturally most concerned with communication, so that it is necessary to know something of the phonetic composition of speech sounds and other charcteristics of the speech which is being presented to the child. It is generally as-

*Goodman, A. I., "Residual Capacity to Hear in Pupils in Schools for the Deaf." *Journal of Otology and Laryngology*, LXIII, 1949.

**Hudgins, C. V., "Auditory Training: Its Possibilities and Limitations," *Volta Review*, Oct., 1954, 339.

***van Uden, A., "A Sound Perception Method," *The Modern Educational Treatment of Deafness* (A. W. G. Ewing, Ed.) Washington: The Volta Bureau, 1960.

sumed that in order to make the best use of a deaf child's residual hearing capacity some form of amplification will be used. The third factor is therefore concerned with the capabilities and performance of amplifying equipment and the effect of the conditions under which it is used upon its optimum help to an individual.

It will be seen, therefore, that there are three factors to be considered—the residual hearing of the child; the nature of speech and the capabilities of hearing-aid equipment. All of these factors are interacting, a situation which is schematically shown in Figure 2.

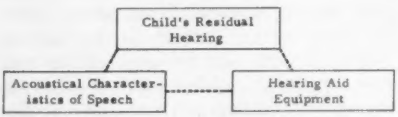

Fig. 2

This triangle of interacting factors is the basis upon which all work involving the use of residual hearing needs to be studied. Hearing aids are articles of scientific equipment which need to be used scientifically. Until there is a very clear knowledge of the information which a study of these three factors provides, the aids cannot be used scientifically nor can help be given to children to make the most effective use of their residual hearing. It is to be hoped that the time has passed when it was considered sufficient to provide a child with a hearing aid and hope that with sufficient exposure to sound, particularly speech, he would come to understand some of it and perhaps imitate some of the sound patterns in his own speech. Even carefully structured programs of what is usually known as auditory training need to be based on this knowledge. Too often the teacher is unaware of the information which is being received by the children and too often some kind of discrimination practice is being attempted which a knowledge of the triangle of interacting factors would have shown to be quite impossible.

Residual Hearing in Deaf Children

It has already been pointed out that deafness may be considered as a continuum and that qualitative terms are often applied to indicate a given child's position on this continuum. However, for the purpose of assessing residual hearing capacity in children it is necessary to have more precise measures. The usual way in which this information is obtained is, of course, by means of a pure-tone audiogram. The information given by this is particularly valuable as a means of diagnosis, but it is limited in the present context insofar as it denotes only the threshold of the child's hearing for pure tones. It thus delineates the lower level of the area of a child's residual hearing. The upper limits of this area are marked by physiological limits of tolerance for very loud sounds, often modified in individual cases by psychologically induced reduced tolerance or by recruitment. The area is not inevitably unalterable, however, for in the case of the lower limit there may be a rise or fall depending upon changes in the peripheral mechanism of hearing. These changes may be for the better as a result of medical or surgical treatment in appropriate cases; they may be for the worse according to the pathology of the disease. The upper limits of tolerance may in some cases be raised as a result of auditory training. Generally speaking, however, most cases of sensory-neural involvement do not show marked changes in the area. Figure 3 illustrates a typical example of the area of residual hearing in a child with sensory-neural loss.

Some work by Strizver* has shown that there is a relationship between children's ability to discriminate pitch

*Strizver, G. L., "Frequency Discrimination of Deaf Children and Its Relationship to Their Achievement in Auditory Training," *Volta Review*, Sept., 1958, 304.

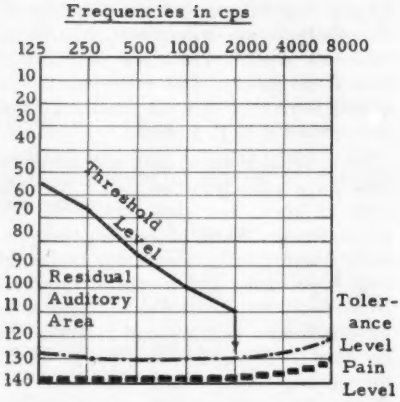

Fig. 3.

and their speech perception. He found that those children who could discriminate pitch differences around 500 cps were better in discriminating speech than those with poor or no pitch discrimination. Pitch discrimination was more difficult for profoundly deaf children at higher frequencies and in any case showed no significant correlation with speech perception. It would seem that this measure of pitch discrimination may have some prognostic value in terms of potentiality for learning to discriminate speech sounds and could, therefore, usefully be administered routinely to severely and profoundly deaf children.

Since our primary concern is with the child's hearing at supra-threshold levels, we are obliged to look for measures other than pure-tone audiometry for information. So far, the most useful exploration of the area of residual hearing is that which is made by means of speech audiometry. By means of different speech tests it is possible to discover at what point speech just becomes audible and then what effect on the ability of the child to discriminate sounds, words or sentences, is obtained by successive increments of loudness. It is also possible, through a modification of speech audiometry, to discover the effect of emphasizing different bands of frequency within this area of residual hearing in order to investigate ways of improving capacity to discriminate. Finally, the measures used as tests of hearing for speech can serve as means of assessing the success or failure of programs of hearing training.

From this emphasis on the significance of speech audiometry, or speech tests of hearing, it should be evident that it is considered essential to have an understanding of possible tests and methods of presenting them as a means of obtaining the information outlined above. The present writer* has described elsewhere some of the shortcomings of standard speech tests devised for adults when used with children and some of the problems that arise in developing special tests for deaf children. These arise mainly from linguistic retardation and from the variations in the intelligibility of the speech of deaf children. The implications of these factors in test construction are that the material must be suited to the stage of the child's vocabulary development and the presentation must not depend upon a spoken response on the part of the child.

These two criteria are met by some of the tests which have been developed at the University of Manchester. In testing for the child's threshold of detectibility for voice, the tester may say the word "Go" or "Now" and the child would be required to indicate in some way that he can hear this. A common procedure is to give the child practice in responding by raising his hand, placing a peg in a socket, or some other activity, when he can both hear and see the speaker (i.e., using a hearing aid and lipreading). When the procedure is obviously clear to the child, he is then put in the position of being able to hear only and the threshold of detectibility for voice is determined by the usual

*Watson, T. J., "Some Factors Affecting the Successful Use of Hearing Aids by Deaf Children," *The Modern Educational Treatment of Deafnss* (A. W. G. Ewing, Ed), Washington: The Volta Bureau, 1960.

audiometric procedure of signals at descending and ascending intensities. Each ear is tested separately in this way. It is perhaps unnecessary to add that the input signal needs to be carefully monitored if any reliability is to be placed on the threshold determination.

In order to determine a child's ability to discriminate, tests may be made using single words or simple phrases or sentences. It has been the writer's experience that single words, used with a repeated carrier phrase, are the most effective test for severely deaf children, since sentences appear to involve memory span, a factor irrelevant to the particular matter being tested, and resolve themselves into a series of discrete words where the context is not necessarily helpful in leading to understanding. The simplest test of this type, useful for children in the three to seven year age range, is known as the K.T. test.

This test consists of a series of toys, selected so that the phonetic composition of their names represents the most frequently occurring vowels and consonants in English. The test mainly involves vowel discrimination, but the recognition of a few of the toys involves ability to discriminate certain consonants. There are five sets of ten toys each and the lists have been equated for difficulty. The results of this test indicate, in the case of children whose vocabulary is sufficient to include the names of the objects presented, the effect of increasing levels of loudness above threshold of detectibility. It may also indicate the level at which a child will cease to tolerate the signals.

A test for children who are a little more mature and whose vocabulary is a little more extensive is the Picture Vocabulary Test. This consists of sets of 20 cards each. On each card are printed pictures of six simple objects and the child is required to select the object named by the tester. As in the case of the K.T. material the test is largely one of vowel discrimination although there are a number of cards in each set where consonant discrimination is necessary. The information obtained from these tests is similar to that described for K.T. material.

Monosyllabic word lists and sentence lists have also been prepared for use with children, but they are more appropriate for hard of hearing or partially deaf pupils, since no contexual help is provided and a spoken response is normally required. For children who have sufficient hearing and language to be able to score significantly in them, the monosyllabic word list tests are the most searching and have the greatest diagnostic value.

As far as the presentation of these different tests is concerned, although a standard testing procedure is required, it is not essential to have special speech audiometers. Group hearing aids or speech training hearing aids which have a means of monitoring the speaker's voice and a calibrated output are very effective means by which these tests may be administered. With pupils whose threshold of detectibilty for voice is lower than 70 db it is generally necessary to use a two-room testing arrangement, since such children are likely to hear the sound of the speaker's voice directly as unamplified air-borne sounds. Even in a classroom, or other room where such calibrated equipment is not available, it is possible to make simple tests of discrimination by letting the child listen at different volume settings of a wearable or desk aid and recording the discrimination scores at these different settings. This will not give information which can be related to definite intensity levels, but it will give some useful information about appropriate listening levels. Testing in these circumstances, however, still requires the speaker to monitor the input both in terms of his own speech level and distance from the microphone. It is not suggested that this rather crude testing should supersede more formal

speech tests of hearing, but it is so frequently found that the results of speech tests are not known by teachers and others for whom the information is essential, that it seems better to obtain information which will provide a good working basis for the use of aids than simply to lament the absence of accurate information.

There are, of course, some profoundly deaf children who are unable to discriminate words even when presented in the relatively simple context described above when they are required to do this by hearing alone, however much the sound is amplified. For such children it is important to find out if they appear to have the capacity to discriminate between vowels or even the capacity to hear the different vowel sounds even though they are unable, at least as yet, to discriminate between them. With such pupils the threshold of detectibility for voice should be ascertained and thereafter the long English vowels presented at different levels above threshold. The child may be asked either to repeat the sound he hears or to point to the written form. If he does not appear to be able to discriminate, then he is asked to respond in some pre-selected way (by raising hand, etc.) whenever he hears a vowel sound uttered by the speaker. It also seems to be of considerable help, when assessing residual hearing capacity, to determine whether or not the child can be enabled to hear the sound "s" (as representing the high frequency unvoiced consonants) at any level. This information can be obtained by requiring him to respond in a pre-selected manner when he hears it. A positive response will not necessarily indicate that he hears the sound in the same way as a child with normal hearing, but it will show that in words containing this sound, something will be heard which may later be equated to the spoken and written patterns of the sound "s."

It has already been noted that in the process of making speech tests of hearing it is usual to determine the tolerance limits of the child where these fall below the maximum level of undistorted output of the equipment. Where this has not been done during the actual tests it can readily be obtained by letting the child listen to short phrases or sentences at different levels and indicating if and when a point is reached when the sound becomes too loud to be tolerated.

In describing the use of residual hearing in a later section, reference will be made to the importance of auditory feedback, or the child hearing the sound of his own voice. Some evidence that a child is able to do this is another necessary piece of information which can be obtained during testing. A pure-tone test of hearing which shows that there is hearing for pure tones by bone-conduction is usually indicative of the child's ability to hear the sound of his own voice, although profoundly deaf children will usually receive better patterns of their own speech through amplified speech being conveyed to the tympanic membrane through the receiver as air-borne sound than through their own bone-conducted speech.

If, by means of monitoring meters and a calibrated output system, levels have been obtained at which the child will respond to speech, it can reasonably be assumed that provided the volume setting is the same and that the child monitors his own speech to give the same input, he can hear his own speech. Professor Sir Alexander Ewing has developed a simple technique whereby this can be checked. In this technique the child wears a receiver on each ear and there must be a means by which sound can be switched from one ear to the other. The child is asked to talk into the microphone and then tell in which ear he hears his own voice when he is in a position where he cannot see the teacher manipulate the controls to each ear.

Having obtained all the information suggested above, we now have some useful data concerning a child's area of

residual hearing. Experience and training may increase the efficiency with which the area is used and give greater meaning to the signals heard in it. Our measures may also serve as a scale with which to measure the effectiveness of experience and training in bringing this about. It is therefore most important that a careful record of the results of these tests should be kept. There are a number of ways in which this can be done. The essential information that must be included is the test used, the equipment and conditions under which it is given and the results. It should also be stressed that these schedules ought to be continuing records, entries being made not less frequently than at yearly intervals and more often when the need appears to justify it.

In the cases of severely and profoundly deaf children, residual hearing will mainly be used in conjuction with lipreading. Evidence of the advantages of this "look and listen" method will be presented later and its uses will be described in a subsequent section. At this time it should be made clear that we have only been considering, up to this point, the examination and measurement of the residual hearing of these children. For more complete knowledge of their ability to understand speech, it is desirable to duplicate the discrimination tests suggested above by giving them additionally in conditions in which the children are able to lipread the speaker as well as to hear him through a hearing aid. The information obtained from such tests could appropriately be included in the schedule. The phrase "hearing and lipreading" would then be noted in the column headed "condition" in the section dealing with discrimination.

It is recognized that discrimination difficulties may arise as a result of conditions additional to sensory deprivation. A child in whom a deficiency in hearing has been clearly diagnosed may also have additional problems resulting from neurological damage or cerebral dysfunction. In addition to the difficulties of making differential diagnosis, it is also extremely difficult to assess the effect of different levels of involvement on functional ability to discriminate speech. It may be deduced that a child who has much greater difficulty in discriminating sounds than his hearing loss, as indicated by his pure-tone threshold and his threshold of detectibility for voice, would appear to warrant, has an added neurological deficit, provided there is some other evidence to support this conclusion.

Although such an additional handicap and its effect on the learning potential of the child needs to be recognized by the teacher, the latter's prime concern is with the child's functional ability. The teacher's problems are "How well can he discriminate now?" and "What steps can be taken to help him to improve this skill?" The measures outlined should constitute an answer to the first question; the answer to the second question will form the subject of a later section.

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Minutes of the Annual Meeting
Council on Education of the Deaf
Salem, Ore., June 27, 1961

Members present:

A. G. Bell Association for the Deaf

S. Richard Silverman, Director, Central Institute for the Deaf, St. Louis, Mary E. Numbers, Supervising Teacher, The Clarke School for the Deaf, Northampton, Mass., (Miss Numbers was appointed by Dr. George Pratt as special representative of the A. G. Bell Association for this meeting to provide a quorum.)

Conference of Executives of American Schools for the Deaf

William J. McClure, Superintendent, Indiana School for the Deaf, Indianapolis, Ind.; Edmund B. Boatner, Superintendent, American School for the Deaf, West Hartford, Conn.; Leonard M. Elstad, President, Gallaudet College, Washington; Marshall S. Hester, Superintendent, New Mexico School for the Deaf, Santa Fe, N. M.

Convention of American Instructors of the Deaf

Richard G. Brill, Superintendent, California School for the Deaf, Riverside, Calif.; Lloyd A. Ambrosen, Superintendent, Maryland School for the Deaf, Frederick, Md.; David Mudgett, Deaf Teacher, Illinois School for the Deaf, Jacksonville, Ill.

Others present:

Powrie V. Doctor, Editor, *American Annals of the Deaf*, and Roy M. Stelle, Next President, Convention of American Instructors of the Deaf.

President S. Richard Silverman opened the meeting at 2:30 P.M. with a brief resume of types or correspondence he had been carrying on pertaining to the CED which illustrated that the organization is already becoming recognized by other organizations and groups. Examples included correspondence with a group in Kentucky pertaining to the establishment of an oral class for deaf children, a group in Iowa concerned with methods of communication, a contribution of a letter to be included in a book of letters for Harley Z. Wooden, retiring Executive Secretary of the Council for Exceptional Children, and correspondence regarding the unfavorable image of deaf people created by a character in a comic strip.

One of the objectives of the CED is to develop mechanisms for receiving foreign groups. President Silverman proposed that a directory be developed which would be arranged geographically and which would have a one-para graph description, submitted by the agency, of what is to be seen at each place and whether facilities are available for housing guests. This directory would be cross-indexed. It was suggested that the editors of the *Annals* and of the *Volta Review* explore the possibility of the International Cultural Association (ICA) or some other group sponsoring this.

Lloyd Ambrosen had been appointed to represent the CED at the Workshop on Community Development Through Organization of and for the Deaf, which met at Fort Monroe, Va., in April, 1961. Mr. Ambrosen reported on the Workshop.

The following two resolutions were submitted by the Workshop to the CED:

1. *Instruction in Civic Responsibilities*

The Conference of Executives of American Schools for the Deaf, the Convention of American Instructors of the Deaf, and the Alexander Graham Bell Association for the Deaf are informed that it is recommended that the scools for the deaf include in their curricula a

course on civic responsibilitiy of the deaf, with particular emphasis on their duties and obligations to the organizations of the deaf.

2. *Role of the Professional Organizations*

The Conference of Executives of American Schools for the Deaf and the Convention of American Instructors of the Deaf are to be informed that the adult deaf endorse the concept of developing social services for the deaf as brought out by this Workshop and that their cooperation is desired in developing a better understanding of our mutual problems, needs, and aspirations.

These resolutions were received, discussed, and accepted by the CED.

Dr. Silverman and Dr. Doctor, who will serve as the Executive Secretary of the Internationl Congress or Conference on Education of the Deaf (I.C.E.D.), had spent considerable time previous to this meeting in working out plans for the I.C.E.D. to be held June 23-28, 1963. These plans were reported to the CED. Certain basic principles were stated as follows:

1. The Co-Chairmen of the I.C.E.D. (Silverman and Elstad) take full responsibility for the meeting.
2. Each committee will have co-chairmen.
3. There will be two kinds of professional contributions:
   (a) Invited
   (b) Contributed
4. The focus will be on the *education* of deaf children.
   (a) Peripheral topics must relate to education of deaf children.
5. Sessions
   (a) Plenary sessions will be held in the mornings with invited papers.
   (b) Sectional meetings will be held in the afternoons with contributed papers.
6. Participants and papers
   (a) Wherever possible primary sources of information will be called upon.
   (b) Documentation of all that is presented will be encouraged.

The planning analyzed jobs to be done and a list of committees was made to carry out these jobs. The original list, which is tentative, is as follows:

(1) Program
(2) Local arrangements
(3) Finance
(4) Public relations
(5) Editorial:
   (a) Edit program; abstract papers before meeting and print in four languages.
   (b) Edit proceedings
(6) Translation:
   (a) Simultaniety of foreign languages
   (b) Interpretation manually
(7) Relations with other organizations:
   (a) Committees of foreign groups
   (b) Relations with American organizations
(8) Executive committee

Dr. Silverman and Dr. Doctor had listed the names of 80 people in the profession who they believe are capable, knowledgeable, and willing. From this list, with additions, will be drawn the staff to prepare the I.C.E.D. Certain names were discussed for the co-chairmanship of the various committees listed on the previous page.

The over-all plan for the program was diagrammed by Dr. Silverman. The I.C.E.D. will open on Sunday, June 23, 1963 with registration and the various ceremonials appropriate to launching such a meeting. Monday will be devoted to *Assessment* and would include assessment in such areas as physiological psychological, educational, communication, social and economic. Tuesday will be devoted to *Teaching of Means of Communication.* These would include speech, lipreading, manual alphabet, signs and hearing. Wednesday will be devoted to the *Teaching of Language and Reading.* Thursday will be devoted

(*Continued on page* 357)

The Teacher Shortage —A National Problem

AS the September *Volta Review* goes to press in mid-August, Rep. Edith Green (Chairman of the House Subcommittee on Education) informs us that hearings will be held August 22 and 23 on several bills relating to the handicapped. Among them will be Senate 336 (House 4616), already passed by the Senate on March 3, 1961. Several identical bills were introduced in the House during this Congressional session, but the bill, designed to help alleviate the shortage of teachers of the deaf by providing scholarships to teacher training centers and to train speech pathologists and audiologists, has not come to a vote in the House. With the date of Congressional adjournment near, it appears likely that it will not pass this session.

The same bill, under a different number, suffered the same fate in the last Congress, following a series of hearings throughout the country at which many members of the Association and its Parents' Section testified as to need for the legislation.

Teacher Shortage Continues

A mail survey completed in May 1961 shows that the shortage of teachers of the deaf presents a critical problem for this school year. Heads of 269 of the 400 schools and classes for the deaf in the United States indicate a need for 653 trained teachers. There were only 199 teachers-in-training last year, leaving a shortage of some 454 classroom teachers. Five of the training centers reported no teachers-in-training last year.

The legislative committee of the Council on Education of the Deaf provides the following comparative information:

School Year	*Teachers Needed*	*Teachers-in-Training Graduated the Previous Year*	*Shortage*
1958-59	*516	138	*378
1959-60	*511	127	*384
1960-61	*549	177	*372
1961-62	**653	199	**454

Dr. George T. Pratt, president of the Alexander Graham Bell Association and Chairman of the CED Committe on Legislation, notes an interesting fact revealed by the mail survey. Although there were only 199 teachers-in-training graduating in June 1961, schools were able to secure, as of May 31, 1961, 290 additional teachers. This means that 91 teachers who were not teaching in 1960-61 are being brought back into the profession this fall.

(*Continued on page* 340)

*Responses from 233 of the 380 schools and classes for the deaf in the U. S.
**Responses from 269 of the 400 schools and classes for the deaf in the U. S.

The *Parents* SECTION

Seven new groups have affiliated with the Parents' Section since our last publication in June, bringing our total of affiliates to 64. The Parents Group, Madison County Chapter of the Alabama Society for Crippled Children and Adults, in Huntsville, Ala., with 15 members, is working to set up a special class in the school system for children with hearing problems. Another new affiliate, the Marin County Parents of Hearing Handicapped Children, Belvedere, Calif., with 20 members, was started in 1958 in response to the need to provide and improve public school facilities for hearing handicapped children. Mrs. Fred Martinez is president of this group. Other recent affiliates include the Association for the Hearing Handicapped, Lubbock, Tex. (Mrs. Carl Hunter, President); the Oral Association, Nystrom School, Richmond, Calif. (Albert Boyer, President); the PTA, West Side School for the Deaf, Detroit, Mich., with 20 members; the Parents of the Aurally Handicapped, Ceres Elementary Schools, Ceres, Calif., with 27 members (Richard Barker, President); and the Hyde Park Chapter of the California Guild for Deaf and Hard of Hearing Children, Los Angeles, with 20 members (Mrs. Ardell Shippy, President).

"I would like to know where I could get the results of any survey that may have been taken on the vocational success of graduates of schools for the deaf," writes Jonah Shinton of the Home and School Assn. of the Pennsylvania School for the Deaf. "Our school started a machine shop course two years ago, but we have as yet no graduates in this course. We have several other vocational courses at the school which have been very successful. We will break ground for a new vocational building this fall, thanks to $1¼ million from a will. Our first fund-raising drive, a cake sale on Memorial Day, brought us almost $400. We were all pleasantly surprised at the results. We also had our first discussion period, for parents of children being promoted from the Middle to the Upper School. The greatest concern seemed to be that the vocational graduates seem to make up almost 90% and academic only a few, also that so few of the graduates go on to higher education. One of our problems is, most of our active parents are parents of day students, and 90% of the children are residential. We are having a little trouble pushing the teacher recruitment program, because our school hopes to set up a teacher training program within the school soon and most want to wait until that happens."

The Parents' Council for Hard of Hearing and Deaf Children, Providence, R. I., has established a subcommittee to study the preschool situation in that state. The group held its annual family picnic on June 25. When Bob Cole, president of the Parents' Section, spoke to this group last spring, he stressed that *parents* should take action and not expect the professionals to take the leadership and do the work of getting what is needed for deaf children. Mr. Cole felt that parents should be responsible for locating children with hearing handicaps and presenting names and numbers to the school district, while the professionals should do the teaching.

An article telling the history and goals of the Preschool Deaf and Hard

of Hearing Assn., Winnipeg, Canada, was published in the *Manitoba Teachers Journal*, which is distributed to 10,000 teachers and education students in Manitoba and other provinces, as part of the group's public relations program and effort in teacher recruitment. Mrs. Barbara MacDonald, President, writes, "We have also sent out speakers and films (using the films from Clarke School and Lexington made available to us by our affiliation with Parents' Section), to many local organizations and have received fine publicity and an excellent reception. We plan to do something in the high schools in the fall through the guidance classes and supervisors. We are also considering setting up a scholarship fund for the training of teachers of the deaf. There are a number of difficulties involved here for us due to lack of training facilities locally and to a difference in educational requirements for such teachers in our province. It is our earnest desire to contribute to the raising of these standards in every way possible. We value very highly the privilege of our affiliation with the Parents' Section and are most grateful for the wonderful help and encouragement we receive."

Publicity was used to good purpose by another Canadian group of parents of preschool deaf children in Hamilton, Ontario, who got together last fall and set up a preschool, open for two hours a week—the only training for deaf children up to five years in Hamilton. The publication of an article about the school in the local paper aroused the interest of several local service clubs, and the school now has 14 children and one full-time teacher, Miss Grace Harris. The Central Lions Club of Hamilton committed themselves to provide the new equipment needed for the new classes required by increased enrollment, volunteered to pay the salaries of the teachers for at least two years and pledged active participation in the activities of the school. The Hamilton and District Credit Union Ladies' Auxiliary, the Rotary Club, the Pilot Club and the B'nai Brith also gave support to the school.

The Parents Hearing Education Association of Toledo, Ohio, has been trying to persuade local school authorities to make more provision in the public schools for classes for deaf children. Mrs. Beverly Taylor, writing for the group, tells of their frustrations, familiar to many parent groups: "When we went to the Superintendent and asked for a supervisor for the deaf, we were told we could not have one, because we did not have enough units. We will never have enough units until we get more teachers, and we feel strongly we will never get teachers until we get a supervisor for the deaf. Also, how can we have enough units, when they won't start the children until they are five and six (then only ½ day), and also put 10 and 13 into a class? Then the few who are trying to make the high school grade are scattered all over."

The PTCA of the New Mexico School for the Deaf met on Sunday, Aug. 27, the day that students returned to school for registration. In August each year the school holds a three-day session for the parents of children who will be entering the school for the first time or who will be entering within the next few years. Feeling that students need continuous use and practice in language, during the summer each student of the school is required to read five articles a week in *My Weekly Reader* or *Reader's Digest* and to make a report on each article. Mr. Thomas Dillon, Principal, writes in the school bulletin, "Good speech, ability to express one's self and to understand spoken and written language can only come from continuous and extensive use of English language."

The Hearing and Speech Center of Grand Rapids, Mich., held its third annual summer lecture-discussion series for parents of preschool deaf and hard of hearing children in July and August.

This was a four-week program scheduled for two hours a week during evening hours. Each week, a panel of professional workers discussed the problems and causative factors of deafness, the relationship of hearing loss to educational needs, the psychology and personality of the deaf child, home and educational materials and equipment for instilling and implementing speech and language therapy, and discussions of current and future research of the deaf and hearing impaired. Time was allotted during each session for a question-answer period.

DON'T FORGET the regional meeting of the AGBA in Ft. Lauderdale, Oct. 27 and 28. There will be a session devoted to parents and parent group activities on Saturday morning.

The number of students graduating from high schools in the U.S. is steadily increasing, as shown by statistics released by the Office of Education, U.S. Department of Health, Education and Welfare. Those graduating from high school last June numbered 1,639,000, and it is estimated that 1,803,000 will graduate in June, 1960. By 1966 the expected number of high school graduates will be 2,542,000. *School Life, May, 1959*

(*Continued from page* 337)

Nearly all of the 269 schools and classes responding to the questionnaire indicated that they wished to expand their program during the next five years to accommodate more children if teachers are available. An estimated 606 additional teacheres will be needed to staff these expanded programs.

Meanwhile, during this school year, the Parents' Section of the Alexander Graham Bell Association for the Deaf will continue its recruitment program. Since the project was begun only in June 1960, the effects have not yet been felt, but should result in increased numbers of applications to teacher training centers this year. An increasing amount of mail from young people expressing interest in becoming teachers of the deaf has been received at Association headquarters for the past several months. Free literature is distributed by the Parents' Section on request.

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Schools and Classes for Deaf Children Under Six

The June issue of the *Volta Review* carried a list of Schools and Classes for Deaf Children Under Six. Since then, information about additional schools has been received, and is listed below. The type of facility, minimum age at which children are accepted, types of other handicaps in addition to deafness and the address to which inquiries may be directed are listed.

CALIFORNIA *San Rafael*—Marindale School, Box 231, 1051 Los Ovejas, public day, 3 years, deaf and other handicapped children.
Santa Fe Springs—Cresson School, public day, 3 years: Little Lake School District, P.O. Box 2335, public day, 3 years.

NEW JERSEY *Roselle*—Grace Wilday School, Brooklawn Ave., public day, 5 years, mentally retarded and other multiply handicapped children.

NEW YORK *Commack*—Suffolk School for Deaf Children, Mayfair Terrace & Jericho Turnpike, public day, 3 years.

Peru—Peru Central School, public day, 4.9 years, mentally retarded, aphasic and other multiply handicapped children.

Spring Valley—Class for the Deaf, Ramapo Central School District No. 2, 14 Church St., public day, 4 years, mentally retarded.

VERMONT *Burlington*—Vermont Rehabilitation Center, DeGoesbriand Memorial Hospital, Speech and Hearing Unit, day classes, 1.6 years, aphasic, mentally retarded and other multiply handicapped children.

The Parents Talk It Over

VIA ROUNDABOUTS

If you would like to join a correspondence group to discuss your problems and your children by letter with other parents of deaf children, and with an Association representative, send your name, the name and age of your child and the degree of hearing loss to the Alexander Graham Bell Association for the Deaf. Requirements are that you be a member as the Association and that you answer the Roundabout promptly

Hattie Harrell, a member of the Auxiliary Board of the Association and director of the Tucker-Maxon Oral School, Portland, Ore., is cordinator of this Roundabout.

I wanted to join a Roundabout so that I could learn from the experience of other parents who have the same problem, and perhaps benefit from "talking" over things. When Kenneth was 15 months old I called the state school for the deaf and asked how I could tell if my child was deaf. We had been concerned about his motor coordination and development and had not considered deafness. With the help of a pediatrician an appointment was made for a PGSR test at a hearing and speech center. However since they couldn't put on earphones they were unable to get an accurate audiogram.

I heard about a speech clinic where I now take Kenneth one day a week. I regret that when I took him for an audiological examination in March he wasn't very cooperative so another appointment had to be set up. It seems that I have been a long time finding out very little. This has led me to believe that Kenneth has very little residual hearing and that amplification would do him little good and that he will have to rely on lipreading.

When Kenneth first went to the speech class I stayed with him a couple of times, but now he knows that I will be back and he makes out fine. Do you think he would benefit by going to Sunday School with his older brother? Do you think I should give him opportunities to play with other children? We live in the country and have no close neighbors but I am sure I could have time to take him.—*Mrs. Z.*

Kenneth's willingness to stay in the class without you is good news. It shows good adjustment and a feeling of security in his parents and home. I expect that the audiologists will advise a hearing aid. Many of us feel that we do not know what amplified sound will do for a child until we have tried it. I'm delighted that you are subscribing to the correspondence course. Yes, I believe in children attending Sunday School if there is an appropriate program for their age.

• • • •

My husband and I have the misfortune of never having known a deaf person and have no deaf children here in our community, so you can readily understand why this Roundabout will mean so much to us!

Nancy Ann was three months old when we got her, and after a few months we both felt that perhaps she could not hear. We first noticed that in the morning when we went into her room she would not turn around or even look at us unless she saw us. When she was 18 months old, we took her to an ear, nose and throat specialist and he told us that

she could not hear. X-rays were taken and we were told that nothing organically was wrong and that her deafness was probably a nerve deafness which could not be remedied. At an audiology clinic, it was found that her db loss was 70. We immediately fitted her with a binaural aid on a headband, which she has worn constantly since then. She loves it. It is put on immediately in the morning and does not come off until bedtime or swimming time. She is quite active physically and rough. Personality-wise, she is self-willed, independent and stubborn. She lipreads well and we have no trouble communicating with her. She attends regular nursery school, and they all love her and (we think) spoil her.

Since our state has no preschool facilities for the deaf, I have been giving her lessons from the correspondence course. Our state school is full and has a waiting list of over 300. I have found that not many of the residential schools east of the Mississippi are open to out-of-state students. We are hoping to move, if possible, as we do not want to send Nancy away to school if we can help it, because this would mean that I would have to go to work to pay the tuition. We would all be going in different directions, which we think is unfair to both children. We found that Nancy *could* have been returned to the agency, but we felt that we couldn't do this because we were afraid no one would adopt her and she would never have parents or a home.

We have tried to keep Nancy's environment as normal as possible. We were told that in some schools it takes as long as three years to discipline deaf children before they can enter first grade. With this in mind, we have been strict with Nancy. I am hoping that when she does enter a school, she will be a ready and willing pupil. We have also concentrated on not having Kim burdened nor feeling sorry for Nancy in any way. Nancy adores Kim and Kim is very gentle and fair with Nancy, but I can't say vice versa!—*Mrs. W.*

When I hear of a deaf child who has been adopted I immediately think, "What a fortunate child," for the parents have gone out of their way to bring the child into their home. It is fine, too, that Nancy has such a considerate sister in Kim.

I definitely feel we should keep the environment for our deaf children as normal as possible. Nursery school with hearing children is good, when a good one is available. When one is not available, two or three mothers whose children are similar ages can form a play group, take turns being teacher, and let the children have an hour or so of play together several times a week.

With regard to discipline, make sure that your child obeys. Children are happier when they know what is expected of them. They will try to overstep the bounds you have set, but I beg of you, be *consistent.* Be fair always, but be consistent.

• • • •

Kristine's loss was discovered when she was about four. We thought at first that it was due to a skull fracture and concussion suffered in an automobile accident, but since we have found out that Karl is deaf, the doctors believe that Kristine was deaf at the time of the accident. She is in the third grade and receives good grades. She is the only handicapped child in her room. She has adjusted very well, loves school and has many friends. She has speech help twice a week for a half-hour session.

Karl's loss was discovered last fall. We had suspected it but we felt that he was too young to test accurately. He now wears a hearing aid. He has a small vocabulary—momma, daddy, tractor, water, potty, eat, meat and similar words. He does not as yet speak in sentences and we have made no attempt to force him. We do a lot of talking to him at home, and he now watches lips more and is trying harder to talk. We too subscribe to the correspondence course and find it very helpful. Karl attends the local class for the deaf and

hard of hearing after school, three days a week for about an hour. Usually he does not want to go home. He loves his teacher and since she has been working with him, we have noticed such an improvement. He is learning his colors and learning to lipread them. We had some trouble with temper, but that is almost over.

We are fortunate to have so many advantages in this area. Karl and my husband and I are going to attend a program for parents and preschoool children at the state school this summer.

We have one problem with Karl and that is getting him to wear his hearing aid more. He wears it for his class and part of the day, but will not wear it all day like his sister. I suppose that will come in time. We are a little guilty of expecting him to do what Kristine did, since they have the same problem, but no two children are alike. Kristine has very few problems with her speech and we really have to stop and remember that she is hard of hearing.—*Mrs. K.*

You are so right in remembering that no two children are alike. Your Kristine has certainly done well and I'm glad she is able to attend school with hearing children. Not all deaf children can do this. Their success in regular school depends upon many factors—the degree of hearing loss, intelligence, disposition, lipreading ability, desire to learn, the school, the teacher, etc. I'm glad you and yours are attending the preschool session at your state school. I wish every state provided such help.

• • • •

I had long questioned Tracey's reaction to sound and the spoken word. Our school speech therapist spoke at a PTA meeting and I consulted her about Tracey. After the interview the therapist said that she suspected a hearing loss but could not determine how severe. We took Tracey to the nearest speech and hearing clinic where the therapist recommended that Tracey be fitted with a hearing aid and that she wear it as much as she would tolerate it. I am now traveling 30 miles to the clinic three

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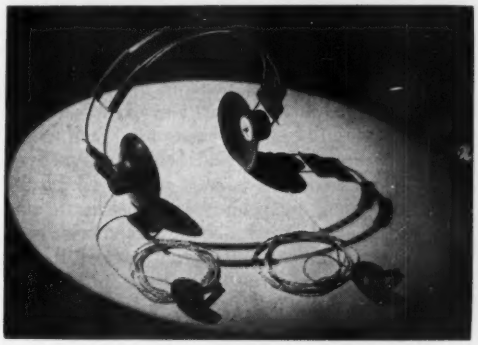

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times a week. During these sessions, Tracey is with the teacher alone or with the teacher and other children. This is an accomplishment because at first I was certain that she would not stay without me. On the other two mornings, she attends a cooperative school in our community. The children all speak to her and she watches them, but as yet does not respond with language. I have an extra hearing aid which the other children wear and play with so they don't bother Tracey too much when she wears hers. She does say bye bye, boat, ball and papa.

I am a busy housewife, belong to the PTA and other social and service organizations. I belong to a modern dance group, and Tracey is also a participating member. Tracey always enjoys playing with children and being with other people, and under these conditions, she is not as demanding and doesn't have time to clutch at me and act bored.—*Mrs. B.*

You seem to be keeping up a heavy schedule. I definitely believe in children having advantages, but I do warn parents not to undertake more than they can do well in addition to their regular home duties. A deaf child demands more of a parent's time, but parents must bear in mind that each member of the family deserves his share lest there be jealousy, which would be a sad, sad situation.

• • • •

We didn't realize Martin's hearing loss until he was nearly two. Then it was quite hard to believe. After our family doctor said he might not be hearing normally, we took him to two different specialists and then to a medical center. They all said he could wear an aid for several years and then attend our state school for the deaf. We got him a hearing aid and he wears it about half the time. He seems a little more aware of sounds, and plays more quietly while wearing it, but he isn't fond

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of wearing it yet. We also started the correspondence course and feel we have both benefited a great deal. Our state school for the deaf is 300 miles away and still seems to allow manual communication. For these reasons we hoped for other future plans for Martin. In April we made an appointment at a clinic that deals with all speech problems. They gave Martin an unhurried hearing test and other tests and answered all our questions. They assured us that he could learn enough speech and language to attend school here in four or five years. We felt he could, but were so happy to hear it from them.

His vocabulary includes about a dozen words and many farm animal sounds. Sometimes it seems he isn't making much progress in language. This may be our fault because we don't require it. For instance, when we try to get him to say milk, he ignores us and reaches. We plan to start taking him to a town 45 miles away this fall for twice weekly, or more, speech lessons. We think a normal secure home life is as important as speech at this age. We also agree that discipline must be consistent and strict although it's hard, especially for Mama. I guess the real help we got was our own attitudes. After we were given a good program to follow, and some hope, we felt much better about it.—*Mrs. K.*

It is nice to know that you, too, have followed through in conferences at agencies which were in a position to help you. Do I understand that the people at the second clinic said that Martin would be able to attend regular school four or five years from now? If so, I would assume he does not have a severe loss. I'm sure members of the Roundabout will conclude that I believe in schools for the deaf. That is correct—I do. I think it is wonderful if a child can attend regular school, but I've seen far too many children's education ruined while they attempted to remain in schools for hearing children when they should have been in the care of a teacher

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trained to teach the deaf child. I hope you will send a copy of Martin's audiogram.

• • • •

I had German measles when about five and a half weeks pregnant, so we had several months to prepare ourselves for a baby with a possible congenital abnormality. When Peter was about seven months old, I suspected that there was something wrong with his hearing, but the doctor wouldn't agree so we suppressed the idea. When Peter was 17 months old, we took him 200 miles to a specialist who diagnosed it as nerve deafness with little, if any, residual hearing. He recommended writing to the Volta Bureau, and for the correspondence course. He wrote to the audiology department of a neighboring state university for an appointment, over 700 miles away. The audiologist's opinion was that Peter has about an 80 db hearing loss, and a hearing aid was recommended. A staff member of the local hearing society answered many of our questions about schools for the deaf. The problem of schooling—where, what and when—seemed very important and difficult for us as it is for many of you also. We are following recommended home training for Peter, but recognize the future need for the services of highly trained personnel. There are no preschool classes for the deaf in our state, or even in surrounding states.

We were advised that it might take several months for Peter to get used to the hearing aid so we did not force it and felt fortunate when he started wearing it full time at 22 months. Now it is a part of him and we feel a great benefit to him. His sounds became more varied and pleasant when he started wearing the aid, and we felt that he was not conscious of sound before.

We were told not to expect speech to come soon or perfect and have not tried to force it. We try to talk to Peter whenever he looks at us, and he seems to be lipreading and understands quite

We only look at the pictures now, but later on we will read the stories for ourselves

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well, but at times is frustrated in making us understand. We live in a mobile home on a private farm outside the city limits. We have delayed plans for a home in view of taking Peter away to school. We are trying to maintain a normal childhood for Peter and he is included and accepted in family activities. Our other boy, John, seems to have a healthy attitude toward Peter and we try to spare him feelings of neglect or preference.—*Mrs. P.*

You are the only member of our Roundabout who has expressed a need of guidance regarding schooling for your child. Since you apparently must move I suggest you consider moving westward. Seriously, we will be happy to assist you in finding the *right* school. And you need to be planning. How fine too that you talk to your child whenever he looks at you. This is a habit all should acquire. Once the child learns lip movement has meaning, a milepost has been passed.

• • • •

I too had measles when I was about two months pregnant. When Rod was born, he seemed perfect, then when he was about six or seven months old, little things happened that made us wonder about his hearing. When we took him to an ear specialist, he told us right away that Rod has a severe hearing loss of the nerve type and that he would probably have to learn lipreading. He suggested we write for the correspondence course, which we did. We found that our state's one speech and hearing clinic had one other small child attending. The speech therapist agreed to set up a class for the two children, and he is now taking Rod and the other deaf child twice a week for an hour. Rod seems to enjoy going to class and I am sure it has been beneficial, but I wonder if he will learn to talk just from these short classes. Right now he only says, ma ma ma, but does not connect it with me.

A woman who is working on her degree in speech at the state university found out about Rod and the other child. We have met with her several times and she is enthusiastic about setting up a nursery school here for deaf children and also helping us form a parents' group. This was just like pennies from heaven as our state has no schools for the deaf. Now we are trying to decide on a name for our group, set up articles of incorporation, etc. If any of you have any ideas or suggestions along this line, we would appreciate them.

At present we are very excited because Rod and I have been accepted for the six weeks summer course at the John Tracy Clinic.—*Mrs. H.*

I wish all of our members were having six weeks at the clinic, as you and Rod are doing. You will gain a great deal from this experience.

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BOOK NOTES & REVIEWS

Experiments in Hearing, by Georg von Békésy, translated and edited by E. G. Wever. New York: McGraw-Hill Book Co., Inc., 1960. 745 pages, $25.00.

Anyone who has attempted to summarize any of von Békésy's articles has been poignantly impressed by the magnitude of the task. Similarly, *Experiments in Hearing* does not adapt itself to easy review because of the high caliber of the author's presentation of intricate and complicated content. Many of the articles, originally in German, are integrated in one volume, and Dr. Wever deserves commendation and our gratitude for the translation and arrangement. At first glance it would appear that the articles might not be synthesized into a unity, but careful analysis of the book reveals direction and unification.

Experiments in Hearing is divided into four sections. Part I deals with problems of auditory research, anatomy of the ear, anatomical techniques, experimental apparatus and methodology. These topics are condensed in the first four chapters and here one observes von Békésy as a true scientist. This part of the book contains a description of von Békésy's equipment including the slit lamp, microscope with exaggerated depth, self-administering audiometer, stroboscope, micromanipulator and other equipment he devised in obtaining significant measurements of the operation of the cochlea with respect to volume displacement, elasticity of the basilar membrane, and the measurement of acoustic impedance of the ear drum by the substitution method. In this section of the book, von Béskéy enumerates and clarifies many of the knotty problems arising in scientific research. Among these are:

(1) the classical problem which does not lend itself to easy solution
(2) the persistent question which he considers to be a poorly formulated one and not susceptible to adequate attack
(3) the strategic problem which reduces itself to a matter of choosing alternatives
(4) the stimulating problem which usually relates to a new orientation of accepted principles
(5) the statistical question which represents a survey of possibilities
(6) the unimportant problem which is easy to formulate and easy to solve, but reveals no significant contribution
(7) the embarrassing question which is usually bandied about in meetings, but provides little, if any, useful information
(8) the pseudo problem which derives from different definitions and different methodology.

In Part II, von Békésy explores the conductive processes. Here he investigates the action of the middle ear and describes the difference in sound pressure between two cochlear windows. He also explores the matter of bone conduction, the absolute bone conduction threshold, vibration of the head in a sound field, and the structure of the middle ear and hearing of the voice by bone conduction. He considers resonance frequency of the head by phase observation, the vibratory pattern of the skull, below and above the resonance frequencies and indicates that the thickness of skin varies, and consequently, may influence measurement. He also

develops a method which takes into consideration and is not influenced by the vibration of the mechanical properties of the skin. He shows that the measurement of phase requires frequency above the resonance frequency of the system. He clarifies the translation and rotation action in bone conduction. The importance of this information for medical purposes, in the selection of patients for fenestration and stabilization and other surgical techniques is clearly demonstrated. This information should be a prerequisite for audiologists, for members of the medical profession, for psychologists, physicists, engineers and other related specialists interested in audition phenomena.

Part III contains critical experiments in the field of hearing. This portion of the book may easily become a source book for subsequent research in audition. So many experiments and findings are included that an investigator may complete an experiment only to find it in this section. This part of the book deals with DL for frequency and intensity, Fechner's law and its role in audition, low frequency threshold in feeling and hearing and the spatial attributes of sound, problems in distortion and room acoustics. In this portion of the book, von Békésy considers the fatigue phenomenon.

In Part IV, Cochlear Mechanics, von Békésy investigates tension, stiffness and coupling. The research embraces patterns of vibration of the cochlea, wave motion, frequency analysis and the law of contrast, and the electrophysiology of the cochlea. In this section he also deals with the phenomena of adaptation, fatigue, masking and recruitment. One can see how these phenomena overlap and also how they may be defined. These phenomena he relates to the present theories of hearing: Resonance, Telephone, Traveling Wave and Standing Wave. His formulation of volume displacement in the basilar membrane, detection of cochlea potential, as not only phenomena of stimulus function, but also a contribution of structures, stiffness as related to volume displacement and other observations reflect his contribution to the traveling wave hypothesis. Also, his work in the funneling action of the nervous system demonstrates the phenomena of temporal and spatial summation and inhibition. He extends his work with mechanical model and demonstrates the traveling wave with experiments on the skin and cutaneous sensation.

In the detection and rectification of errors, von Békésy favors different methodical approaches to his research rather than replication. Exact replication could easily embrace and permit the lack of detection of errors contained in the original experiment. Furthermore, von Béskéy also prefers fewer trained observers on whom many measurements can be made, than many untrained observers on whom fewer observations can be collected. His work with models shows an indefatigable tendency to extend the frontiers of knowledge concerning nerve and cortex behavior. At each stage in his experiments, von Békésy gives consideration for critical evaluation. Although the articles have been just put together, they show a lifetime of careful methodical, logical and corrective investigation of auditory phenomena beginning with events progressing from the outer ear to the middle ear into the inner ear and into the central nervous system. When considered in this fashion, all of these articles arrange themselves into a great mosaic which like the works of Shakespeare, Michelangelo, Newton and Maxwell may occur only once in a specific historical era.—*Louis M. DiCarlo, Professor of Audiology and Speech Pathology, Syracuse University.*

Deafness, John Chalmers Ballantyne. Boston. Little Brown and Company, 1960. 286 pages, $8.00.

Dr. Ballantyne's specialized medical background in otology and his experi-

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ence as assistant director of the Audiology Unit, Royal National Throat, Nose and Ear Hospital, London, enabled him to write a comprehensive study of the manifold problems associated with deafness. He has presented his material so as to provide information for the medical, para-medical and educational workers in the field. It is also designed to be of help to the deaf and to parents of deaf children. His awareness of the seriousness and far-reaching effects of deafness is tersely summed up in his quotation from Samuel Johnson, who called it the "most desperate of human calamities."

The author is concerned with the medical, educational, psychological and sociological aspects of deafness. The material of his book is divided into seven parts and appendices. He introduces the work with a summary of the incidence of deafness in Britain. He then devotes Part I to the basic sciences of audiology which includes a chapter on the anatomy of the ear, one on acoustics of what we hear and one on the physiology of how we hear. There is included a brief discussion of the theories of hearing.

Part II, the diagnosis of deafness, includes a chapter on the subjective clinical characteristics of conductive and perceptive deafness, and one on the functional examination of hearing. Here are discussed the tuning fork tests, standard pure-tone audiometry including tests of recruitment of loudness and, briefly, speech audiometry.

Part III is devoted to a discussion of hearing aids. There are brief descriptions of the construction of hearing aids and some requirements of a hearing aid. The chapter on types of electrical hearing aids is enhanced by a number of pictures. The final chapter of this section presents information on the choice and use of an individual aid.

In Part IV Dr. Ballantyne presents a comprehensive review of various kinds of conductive deafness. He discusses affections of the external auditory canal,

affections of the middle ear cleft, otosclerosis, the conservative treatment of conductive deafness, and the surgery of conductive deafness including otosclerosis and chronic middle ear suppuration.

Part V is concerned with perceptive deafness. The author discusses many aspects of the detection, understanding and treatment of the child born deaf. Some diagnostic tests of hearing in infants and in young children are described. The works of Wendy Galbraith of the Audiologic Unit in Gray's Inn Road, Dr. Mary D. Sheridan of the Ministry of Health, and Dr. Bernice Humphreys, Medical Officer to the Maternity and Child Welfare Department, are discussed as they contribute to the detection and early management of the young deaf child. There is also a discussion of the classification of deafness in children, and various types of educational methodologies. Dr. Ballantyne suggests the new term *alloquism*, in his opinion, is unambiguous. Alloquism stems from the Latin root *loquor* to speak. The obsolete word alloquy was defined by Dr. Johnson as "the act of speaking to another; speech, conversation." Thus we now have a reference to alloquism versus manualism. Chapter 17 is devoted to acquired perceptive deafness due to trauma, infections, toxicity, tumours, presbyacusis and Ménière's disease.

Part VI is concerned with psychogenic manifestations of problems of hysterical deafness and malingering. And Part VII is devoted to two aspects of the handicap of deafness; namely, some psychological aspects of deafness and the rehabilitation of the deaf. The Appendices include such useful items as a list of testing materials for use in audiology clinics, word and sentence lists, a list of audiology clinics in Britain, professional bodies concerned with deafness, voluntary organizations for the deaf, and a list of special schools in the British Isles for the deaf and partially deaf. There is also included a

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section on the schools for the deaf and hard of hearing and speech and hearing clinics in the United States.

In summary, this book, *Deafness*, provides a wealth of information about the topic as it is currently viewed in England. Dr. Ballantyne appears to be well aware of the need for extensive research in many areas and of the limited tools for measuring various parameters of hearing function. This reviewer wishes the author had stressed the nature and complexity of some of the severe auditory and language disorders which may account for some of the "educational failures" he describes as remaining isolated in society.

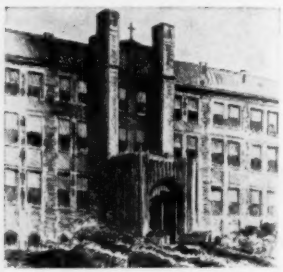
Many professional workers will welcome this work on deafness written by an otologist with clinical insight concerning the many problems of the deafened.—*Harriet L. Haskins, Assistant Professor of Otolaryngology and Environmental Medicine, The Johns Hopkins Medical Institutions*

The Journal of Speech and Hearing Disorders Monograph Supplement 8: Public School Speech and Hearing Services. Washington: American Speech and Hearing Association, 1001 Connecticut Ave., N.W. 1961. 163 pages, paperbound. $1.90.

This is a special report prepared under a U.S. Office of Education Cooperative Research grant by a research committee of the American Speech and Hearing Association. Dr. Mack D. Steer, of Purdue University, was project director.

The Psychovoltaic Reflex and Its Applications to Objective Audiometry, by A. Manfredi and G. Ceresia. Beltone Institute for Hearing Research, 2900 W. 36th St., Chicago 32.

This article, the 15th in the Beltone Translations Series, first appeared in the Italian publication, *La Clinica Otorinolaringoiatrica*, published in Rome. The paper, presented at the International Reunion of Studies on the Problems of Deafness held in Rome, is based on work in the E.N.T. Clinic of the University of Catania.



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DIGEST OF PERIODICALS

American Annals of the Deaf, Washington 2, D. C.

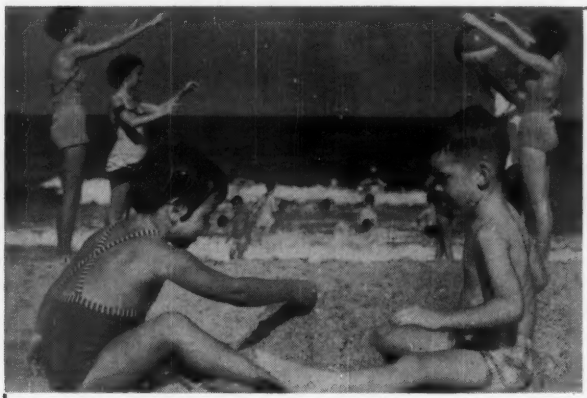
March, 1961

"The Integration of the Deaf in Schools for the Normally Hearing," by Dr. Clarence D. O'Connor, superintendent of Lexington School for the Deaf, is a discussion of a study of 50 former Lexington pupils (1945-57) who had transferred to public classes for the hearing. The study shows that with few exceptions, children born with a 60-70 db loss in the speech range cannot, at the age of 5 or 6, successfully integrate educationally with hearing children. The percentage of pupils who can be considered for educational integration is small. No pupil should be transferred to a regular class until his ability to communicate enables him to meet the severe competition.

"A Mechanical Device for Teaching Sight Vocabulary to Young Deaf Children," by George A. Falconer, is the resumé of the study and development of a teaching device which would teach sight vocabulary to young deaf children. Its effectiveness was tested in an experimental study with a group of 6- and 7-year-old deaf children. The 15 nouns presented in the machine were learned by all children in the group, and retention two weeks later was nearly perfect. The study suggests a new technique to be used by teachers of the deaf to supplement work in the classroom.

May, 1961

This issue contains a report of the Workshop for Catholic Personnel for the Deaf, held at Gallaudet College, March 15-17; and a special report, "Guidelines for the Establishment of Rehabilitation Facilities for the Deaf," based on a conference held at Fort Monroe, Va., Oct. 12-15, 1959.



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AMA Archives of Otolaryngology, 535 N. Dearborn St., Chicago 10.

March, 1961

"Hearing Impairment in a Medical Center Population," by Edmund P. Fowler, Jr., M.D. and Thomas H. Fay, Jr., Ph.D. Mass hearing tests, the authors state, indicate that 80% of the U.S. population has some sort of hearing deficit and 10% has hearing impairment severe enough to require prophylactic or therapeutic attention. They discuss the newer designation for hearing impairment—the terms hypoacusis, anacusis and dysacusis. The causes of hearing loss in the medical center population studied are classified.

Children, Children's Bureau, U.S. Dept. of Health, Education and Welfare, Washington 25, D.C.

July-August, 1961

"Group Education for Parents of the Handicapped," by Aline B. Auerbach, discusses the growing interest over the past 10 years in group programs for parents of handicapped children. The author writes about the leadership training program conducted by the Child Study Association of America. Group sessions of parents of handicapped children are similar to those of parents of normal children, with the exception of a marked intensity of feelings and the degree of concern expressed, stemming from the fact that parenthood is a constant proplem for these parents, and the usual concerns of parenthood are greatly magnified for them. The subject matter for the programs is focused on two goals —community action and helping parents in their daily living with their children. The two goals should be separated, and the subject matter of discussions not be preplanned, but stem from the interests of the parents themselves.

Exceptional Children, 1201 16th St., N.W., Washington 6.

April, 1961

"Differential Diagnosis: Deaf and Sensory Aphasic Children," by James

L. Olson, discusses a test given to 25 deaf and 27 sensory aphasic children who were receiving training at Central Institute for the Deaf. Since the educational programs for deaf and sensory aphasic children are different, differential diagnosis is an essential task, but a difficult one. Use of the new Illinois Test of Language Ability indicated that this test is a diagnostic instrument of value in making the differential diagnosis between the two.

Journal of Speech and Hearing Disorders, 1001 Connecticut Ave., N.W., Washington 6, D. C.

May 1961

"Maximum Auditory Perception (MAP) Word List," by George S. Haspiel and Richard H. Bloomer, is a description of the procedure in selection of monosyllabic words for the sequential vocabulary compiled for use in the development of discrimination skills in children with impaired hearing. The word list can be used in auditory training, diagnosis of discrimination ability and in remedial reading.

Journal of Speech and Hearing Research, 1001 Connecticut Ave., N. W., Washington 6.

June, 1961

"Binaural Hearing Aids and Speech Intelligibility," by James Jerger, Raymond Carhart and Donald Dirks, is the report of a study made at Northwestern University seeking objective verification of subjective reports that binaural hearing aids improve speech intelligibility. Results of the study, based on two tests in which competing signals were presented to the subjects who were wearing binaural aids, failed to demonstrate any marked improvement in the ability to understand speech in quiet, or in noise, against competing discourse.

"Hearing in Children: Acoustic Environment and Audiometer Performance," by Eldon L. Eagles and Leo G. Doerfler, is a report on the initial study undertaken by the Subcommittee on Hearing in Children of the Committee on Conservation of Hearing of the American Academy of Ophthalmology and Otolaryngology preliminary to a long-term nation-wide study of hearing problems in children. This initial study was made on a group of approximately

CALENDAR | OF EVENTS

ALEXANDER GRAHAM BELL ASSOCIATION FOR THE DEAF—REGIONAL MEETING—OCTOBER 27-28, 1961, FT. LAUDERDALE, FLA.

1962 SUMMER MEETING—JUNE 25-29, 1962, DETROIT

NATIONAL REHABILITATION ASSOCIATION—Oct. 2-4: San Francisco.

AMERICAN SPEECH AND HEARING ASSOCIATION—Nov. 5-8: Chicago.

ACOUSTICAL SOCIETY OF AMERICA—Nov. 9-11: Cincinnati-Dayton.

WESTERN REGIONAL—COUNCIL FOR EXCEPTIONAL CHILDREN—Seattle: Nov 15-18.

NATIONAL SOCIETY FOR CRIPPLED CHILDREN AND ADULTS—Denver, Colo.: Nov. 17-21.

WESTERN STATES SPEECH ASSOCIATION—Nov. 23-25: Fresno, Calif.

NEW ENGLAND SPEECH ASSOCIATION—Nov. 24-25; Conway, N. H.

WEST CENTRAL REGIONAL—COUNCIL FOR EXCEPTIONAL CHILDREN—Nov. 29-Dec. 2: Austin, Tex.

SPEECH ASSOCIATION OF AMERICA—Dec. 27-30: New York.

CONFERENCE OF EXECUTIVES OF AMERICAN SCHOOLS FOR THE DEAF—Apr. 1-6: Austin, Tex.

INTERNATIONAL COUNCIL FOR EXCEPTIONAL CHILDREN—Apr. 24-28: Columbus, Ohio.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL & OTOLOGICAL SOCIETY—May 1-3: Dallas.

5,000 children between the ages of three and fifteen years in the Pittsburgh area. A prime purpose of the investigation was to obtain information on hearing levels by determining individual air-conduction hearing levels. The data obtained indicate that a high percentage of children, both with and without otological abnormalities, have hearing levels substantially better than the American Standard audiometric zero. The investigators also concluded that rigid criteria for control of acoustic environment can be met in the field when the nation-wide study is undertaken; and that audiometers can be modified to test accurately levels well below the American Standard audiometric zero.

"Visual Paired-Associates Task with Deaf and Hearing Children," by Hans G. Furth, is the report of a study consisting of a nonverbal memory task of pairing associated objects presented to 180 hearing children and 180 deaf children for the purpose of comparison. The children tested were all between the ages of seven and twelve years. Both the deaf and the hearing children in the seven- to ten-year-old groups had equal success in performing the task. However, the eleven- and twelve-year-old hearing children showed a rapid improvement in the ability to make choices, while the deaf children did not, leading to the conclusion that the deaf children have a deficiency in their experience and training which affects their thinking and motivation for learning.

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(*Continued from page* 327)

lieve that any means which offer the possibility of enhancing a clinician's ability to teach and a pupil's capacity to learn merits investigation. We shall incorporate this and similar films in an organized teaching approach, and would appreciate hearing from others who are interested in using cinefluorography as an adjuct to current teaching methods, and who want to share ideas or results.

Cinefluorographic films, used by a sensitive and skilled teacher in combination with other effective techniques, should open new vistas in the teaching of speech to individuals with handicapping hearing losses. We highly recommend cinefluorography to clinical and experimental consideration.

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(*Continued from page* 336)

to other parts of the *Curriculum* including numbers, science, social studies, aesthetics and vocational.

As was indicated under basic principles, the morning sessions will be devoted to plenary sessions where invited speakers who are authorities in their field, will be able to summarize the knowledge, raise the questions, and express opinions. The afternoons will have sub-sections scheduled with contributed papers on various phases of the general area. Also scheduled in the afternoons will be various sections not easily classified under general plenary session topics, dealing with administration and organization, automated teaching, libraries, teacher education, linguistics, guidance, captioned films, religion, social work, genetics of deafness, multiple handicaps and others.

Friday will be devoted to *Demonstrations* of the items that had been discussed the previous four days.

The tentative evening events are as follows: Monday, a reception at possibly the Pan-American Union with the ambassadors from the various countries represented as guests; Tuesday, a program to be presented by the U.S. Department of Health, Education and Welfare in their new building; Wednesday, devoted to meetings of the various organizations and square dancing for the foreign visitors; Thursday, the formal I.C.E.D. banquet at a major hotel with a world-famous guest speaker; Friday, a dramatic presentation by the Gallaudet College players.

Dr. Marshall Hester moved that plans for the I.C.E.D. as presented by Dr. Silverman be approved with commendation. This motion was seconded and passed unanimously.

Dr. E. B. Boatner reported briefly on the work on the revision of J. L. Smith's book on *Idioms*. He indicated that a good revision was a major project and financial support, such as that provided by a foundation, might be necessary.

President Silverman commented on the Federal legislation pertaining to teacher preparation in the area of the deaf. He pointed out the importance of our profession having a document that does not confine a description of professional preparation solely to credit hours, but contains a detailed exposition of the knowledge and skills essential for preparation and the principles related to acquiring them.

The next meeting of the CED will be held at Austin, Texas at the time of the meeting of the Conference of Executives of American Schools for the Deaf during the week of April 1-6, 1962.

The meeting was adjourned at 5:30 P.M.

Respectfully submitted, Richard G. Brill, Secretary

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NEWS

TWO NEW BOOKS, *A Lipreader Must Practice,* by Medary Rieke Copeland, and *Teaching Arithmetic to Deaf Children,* by Veronica O'Neill, will be published by the Alexander Graham Bell Association for the Deaf this fall.

Mrs. Copeland's book will be dedicated to two former members of the Association, Josephine Avondino and Harriet Andrews Montague, who had devoted their lives to work with deaf children. Miss Avondino was a teacher of the deaf for many years prior to her death in January, 1959. Former associates in the oral deaf department of the Chicago public schools, where she had taught before her retirement, established a memorial fund in her honor to be administered by the Association. Mrs. Montague, who died in March, 1959, had been associated with this organization since 1910, and was a member of the staff from 1931 to 1945, when she left to become director of the correspondence course of the John Tracy Clinic in Los Angeles. A member of the Association's Advisory Board, she was well known for her column, "The Parents Talk It Over with Harriet Montague." Many of her friends and former associates have also contributed generously in her name to a memorial fund to be used in some way to further the work of the Association. The book, to be used in the education of the deaf, will serve as a lasting memorial to these two devoted workers. *A Lipreader Must Practice* contains a wealth of lipreading practice material including exercises, games and stories, which Mrs. Copeland has selected from a large assortment of material that she has adapted and used during the 18 years she has been teaching lipreading at the Minneapolis Hearing Society. This paperbound book will cost $1.55, postpaid.

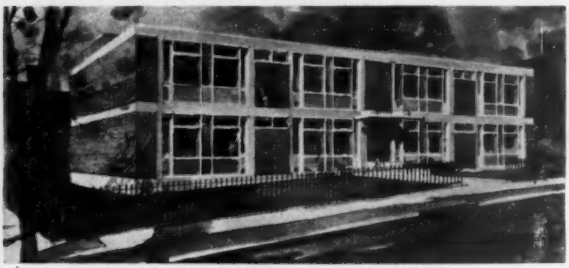
The second book to be published this fall is Book III in the Lexington School Series, written by Miss O'Neill, who teaches arithmetic and algebra to the upper grades at Lexington School. This book is designed for teachers of arithmetic in schools for the deaf, and is based on the experience of a teacher who has been on the staff of the Lexington School since 1942. It covers methods and teaching materials for all age groups, and contains extensive lists of source materials. The book will be paperbound like the others in the series, and will cost $3.20, postpaid.

THE LEXINGTON DEAF ORAL SCHOOL, in Lexington, Ky., was organized in September, 1960, by Parents of Hearing Impaired Children, with the Optimist Club of South Lexington as sponsor. The School, which will open this month with approximately 15 pupils, was established for the purpose of teaching pre-school deaf children speech and lipreading. Norma Harris, formerly of the University of Kansas Medical Center, will be the teacher-director of the school.

A SURVEY of visual aid programs in U.S. residential and day schools and classes for the deaf is being undertaken by Gallaudet College under a two-year study grant from the U.S. Office of Education. Dr. Jerome D. Schein is director of the study.

WILLIAM C. GREER has been appointed executive secretary of the Council for Exceptional Children, NEA, and has moved to Washington from Atlanta, Ga., where he was associated with the Southern Regional Education Board. He succeeds Harley S. Wooden.

CONSTRUCTION of a $275,000, two-story brick building to house the six classrooms of the Children's Hearing and Speech School of the Children's Hospital of the District of Columbia, in Washington, D. C., has begun. It will be ready for occupancy next spring. The school, with a program designed specifically for aphasic children, was started in 1957, and has been using the Sunday School rooms of St. Alban's Parish Church. Current enrollment is 25, and the new building will accommodate 40. Mrs. Edna K. Monsees is director of the school.



Architects' drawing of new school for aphasic children in Washngton, D. C.

NOTES

DR. EDWIN W. NIES, 71, a dentist, and an ordained minister in the Protestant Episcopal Diocese of New York, retired in June after serving 47 years as dentist at his alma mater, the Lexington School for the Deaf, New York City. Born in New York City in 1890, Dr. Nies became deaf at the age of seven as the result of an attack of spinal meningitis. He is a graduate of Lexington School, Gallaudet College and the University of Pennsylvania School of Dentistry. Dr. Nies studied privately for the ministry and was ordained in 1950. He plans to continue his work as minister to his deaf congregation in New York

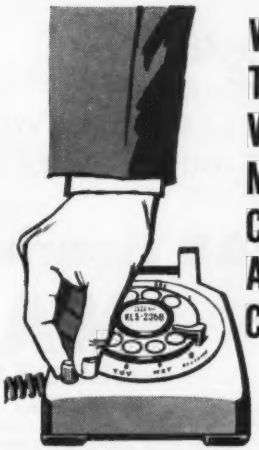
ROBERT E. KELLY has been named principal of the Crotched Mountain School for the Deaf, Greenfield, N. H. A native of New England, Mr. Kelly graduated from Massachusetts State Teachers College, received his master's degree from Columbia University and took his training at Lexington School for the Deaf. He also taught in schools for the deaf in New Mexico and New York. Prior to his appointment as principal he was director of deaf education and hearing therapy at the Wilkerson Speech and Hearing Center, Nashville, Tenn.

JUDGE VICTOR H. BLANC of the Philadelphia Common Pleas Court, will replace Edgar H. Kobak as the Public Member of the National Committee on Ethics of the Hearing Aid Industry. The ethics group was formed by the dealers and manufacturers of hearing aids and components to secure voluntary compliance with the industry's Code of Ethics, which defines advertising, promotion and sales practices considered to be unethical.

MRS. ROBERT WINIALSKI, mother of a deaf boy, who is a student at the American School for the Deaf, in Connecticut, has been appointed as a consultant for special services for the deaf in the U. S. Department of Health, Education and Welfare.

JOSEPH E. LOLO, business manager of Central New York School for the Deaf, has been named acting superintendent, following the resignation of Fred L. Sparks, Jr., who has joined the staff of the Indiana State School for the Deaf. Mrs. Sparks has also accepted a position at the Indiana school.

JEAN MARIAST, director of the Marin Speech Center, San Rafael, Calif., was awarded the 1961 Kenfield Memorial Scholarship, presented by the American Hearing Society. Miss Mariast will study at San Francisco State College.



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NOVA SCOTIA'S School for the Deaf has moved this summer from its location in Halifax to new facilities in Amherst, on the other side of the peninsula. Valued at $2,500,000, the new buildings have group hearing aids in all 24 classrooms.

A SEMINAR AND FIELD STUDY in Reforms and Policy-making in European Education, to be held Nov. 11-28 is sponsored by the National School Boards Association, the International Commission of Phi Delta Kappa and the Comparative Education Society. Dr. Harold V. Webb, 1940 Sheridan Rd., Evanston, Ill., has been receiving inquiries and requests for application forms from those interested in attending the seminar and visiting European educational centers.

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WASHINGTON STATE is seeking a Hearing Conservation Consultant for the crippled childrens' services program. Requirements include a bachelor's degree in an approved course and at least three years of paid professional experience in audiology. Current salary range $492 to $586 plus civil service benefits. Inquire: Personnel Officer, Washington State Health Department, Smith Tower, Seattle.

WANTED: Qualified teacher of the deaf; oral method. Opportunity to see Southeast Alaska and help with a new and needed program of education for pre-school and school age deaf children, ages 4 through 10 years, native and non-native; located in Ketchikan. $7,000 a year and one way transportation, 40 hour week, eleven months program, two summer months flexible. Write C. Eugene Kingsley, Executive Director, Alaska Crippled Children's Association, Inc., 225 E. Street, Anchorage, Alaska.

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WANTED: Teacher of the Deaf, Oregon. The Portland Center for Hearing and Speech is constructing a new $100,000 building, partially financed by Hill-Burton Funds, on the University of Oregon Medical School Campus, adjacent to the University's Crippled Children's Division building. Occupancy is scheduled for late 1961. The Center, which has been granted Medical School affiliation, will have all new and up-to-date equipment and facilities. It will provide an integrated program of medical, psychological, social, vocational, audiological and speech pathology services. Candidate would organize and teach pre-school deaf classes, teach auditory training and speechreading to children and adults, do pure tone tests. M.A.; Salary range $5500-7600, depending on qualifications; 11 months; male or female; age open; August 1961. Warren E. Johnson, Director, Portland Center for Hearing and Speech, 2111 N.E. Weidler Street, Portland 12, Oregon.

Wanted September 1961: Oral teachers of the deaf for an integrated elementary public school program in the Lawndale Elementary School District. Beginning salary will be somewhere between $4812 and $6554, depending on training and experience. Ideal location adjoining and just southwest of Los Angeles City. Apply to: Dr. John Dunworth, Assistant Superintendent of Educational Services, Lawndale School District, 4110 W. 154th Street, Lawndale, Calif.

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WANTED: Principal for vacancy occurring in September, 1962. Private oral school, 20 miles from Boston. 95 residential and day pupils; 13 academic teachers; 7 instructors; preparatory through grade 8. Salary commensurate with training and experience. Write giving full details: William E. Bragner, Administrator, Beverly School for the Deaf, Beverly, Mass.

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POSITION WANTED: Experienced certified teacher of the deaf desires a teaching position in the primary department. Box J-1. Volta Review.

MISCELLANEOUS

FOR SALE: History Stories of the U. S. by M. Evelyn T. Newhall. $1.25 postpaid. 411 Rutherford Avenue, Trenton 8, New Jersey.

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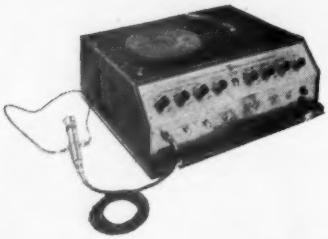

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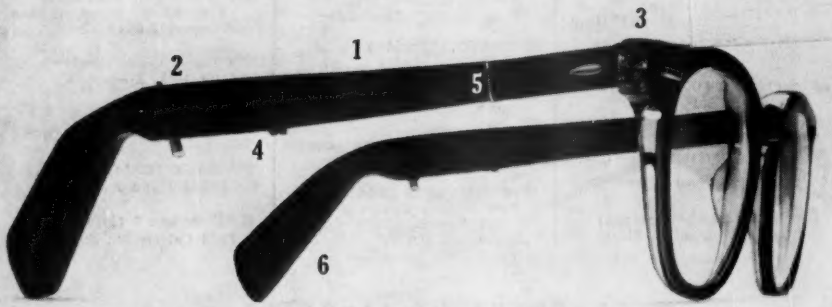

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